

U.S. NAVY MEDICINE

May-June 1983



Surgeon General of the Navy
VADM J. William Cox, MC, USN

Commander
Naval Medical Command
RADM Lewis H. Seaton, MC, USN

Public Affairs Officer
LT Drew Malcomb, USN

Editor
Jan Kenneth Herman

Assistant Editor
Virginia M. Novinski

Editorial Assistant
Nancy R. Keese

Contributing Editors

Contributing Editor-in-Chief: CAPT E.L. Taylor (MC); *Dental Corps:* CAPT P.T. McDavid (DC); *Medical Service Corps:* COMO L.E. Angelo (MSC); *Undersea Medicine:* CAPT R.L. Marlor (MC); *Psychiatry:* CAPT N.S. Howard (MC); *Family Advocacy:* LCDR S.A. Foxx (MSC); *Master Chief Petty Officer of the Force:* HMCM S.W. Brown (USN); *Special Projects:* HMCM C.A. Crocker (USN)

POLICY: *U.S. Navy Medicine* is an official publication of the Navy Medical Department published by the Naval Medical Command. It disseminates to Navy Medical Department personnel official and professional information relative to medicine, dentistry, and the allied health sciences. Opinions expressed are those of the authors and do not necessarily represent the official position of the Department of the Navy, the Naval Medical Command, or any other governmental department or agency. Trade names are used for identification only and do not represent an endorsement by the Department of the Navy or the Naval Medical Command. Although *U.S. Navy Medicine* may cite or extract from directives, official authority for action should be obtained from the cited reference.

DISTRIBUTION: *U.S. Navy Medicine* is distributed to active duty Medical Department personnel via the Standard Navy Distribution List. The following distribution is authorized: one copy for each Medical, Dental, Medical Service, and Nurse Corps officer; one copy for each 10 enlisted Medical Department members. Requests to increase or decrease the number of allotted copies should be forwarded to *U.S. Navy Medicine* via the local command.

U.S. NAVY MEDICINE is published from appropriated funds by authority of Department of the Navy, Naval Medical Command, in accordance with Navy Publications and Printing Regulation P-35. Second class postage paid at Philadelphia, PA, and additional mailing offices. ISSN 0364-6807. Articles, letters, and address changes may be forwarded to the Editor, *U.S. Navy Medicine*, Department of the Navy, Naval Medical Command (MEDCOM 00D4), Washington, DC 20372. Telephone (Area Code 202) 653-1237, 653-1297; Autovon 294-1237, 294-1297. Contributions from the field are welcome and will be published as space permits, subject to editing and possible abridgment.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

NAVMED P-5088

POSTMASTER: Send change of address orders to U.S. Naval Publications and Forms Center, ATTN: Code 306, 5801 Tabor Avenue, Philadelphia, PA 19120.

U.S. NAVY MEDICINE

Vol. 74, No. 3
May-June 1983

1 Department Rounds

Blizzard Rescue in Lebanon
LT G. Cope, MC, USNR

2 Tuscaloosa's Doc

JO2 G.H. Jochum

5 Features

The Inimitable Surgeon Pleadwell
LT D.A. Wilbur, MSC, USN

11 Dean's Welcome Remarks to the Class of 1986

CAPT J.B. Henry, MC, USNR

14 Nurse Corps: 75 Years of Caring

18 Clinical Notes

Treatment of Traumatic Dental Injuries by Nondental Personnel
CAPT D.D. Antrim, DC, USN

25 Professional

Heat Illness
LT B. Surber, MC, USNR
LCDR K. Steele, NC, USN

28 Notes and Announcements

COVER: In May the Navy Nurse Corps reached a milestone, celebrating its 75th anniversary. See pages 14-17. U.S. Navy Photo.

Blizzard Rescue in Lebanon

Navy medical personnel often find themselves involved in unusually challenging situations and such an opportunity presented itself on Tuesday, 22 Feb 1983. As members of the 22d Marine Amphibious Unit (MAU), we had relieved the 24th MAU in Beirut, Lebanon, 10 days earlier and were busy moving into the bombed out FAA building at the Beirut Airport.

It was the end of the rainy season in Lebanon but without warning the

worst rain and snowstorm in 100 years struck the war-torn countryside. Beirut sits among foothills which rise sharply to 5,000-foot mountains just east of the city, where over 6 feet of snow had rapidly accumulated, stranding remote villages and interrupting communications. A preliminary helicopter search found several cars whose occupants had already succumbed to hypothermia. The Lebanese Government requested American

aid in a search and rescue effort and the Marines quickly responded.

The medical team boarded an LVTP-7 (amtrac) and the relief column lead by LCOL D.F. Anderson, USMC, Commanding Officer, Battalion Landing Team, 2/6, headed north along the coastline, turning eastward near the historic town of Biblos. Ascent from the valley to the snowline was slow and resupply trucks were forced to remain at the halfway



Kartaba medical team left to right: HN M.J. Williams, HN K.R. Stribling, HM3 K.A. Ellis, HM3 J.M. Cross, HN R.A. Anderson, LT G.A. Cope, MC, HN D.S. Stone, HM3 J.F. Koval, HN T.J. Kuehne, and HM3 M.S. Mrusek.

point due to the heavy snowpack. The remaining portion of the journey stands as a tribute to the amtrac drivers' skill in scaling the rugged Nab Al Kurum Mountains. Several times the huge vehicles swung out over ledges with an uninterrupted 1,500-foot drop.

After an exhausting 20-hour ride, the advance party arrived at the village of Kartaba and immediately set about the task of identifying the community's medical needs.

The following day the medical team made individual house calls but walking in waist-deep snow at such a high altitude was exhausting. Working with sparse medical supplies and overcoming the tremendous language barrier, the medical aspect evolved into a smooth team effort as over 20 patients were visited. As the day wore on and weather cleared briefly, helicopters brought in thousands of pounds of food, diesel fuel, and other supplies. Consultations funneled into the battalion aid station, set up in the local police station via a network of small PRC-68 personal radios. The general health of the residents was good. Mild dehydration, superficial wound infections, and cold-aggravated arthritis accounted for most of the cases; however, two patients required immediate medical evacuation.

Local custom for the doctor's house call meant an introduction to all members of the family, the medical evaluation, and then the offer of strong espresso coffee and American cigarettes.

The relief column departed on Thursday morning leaving behind a grateful community. All those involved in the operation received congratulations from COL James M. Mead, USMC, Commanding Officer, 22d MAU, for a job well done. Members of the medical team have been recommended for the Navy Achievement Medal, but the true motivation for their work came from an inner commitment that is the hallmark of the Navy Medical Department. □

—Story by LT Gerry Cope, MC, USNR

Tuscaloosa's "Doc"

Since James Ryder of Pomona, NY, joined the Navy over 2½ years ago, he has moved six times and visited nearly 10 overseas ports.

First, there was recruit training in Great Lakes, IL, followed by hospital corpsman school, where he learned the basics of Navy medicine. Then, it was off to Camp Lejeune, NC, where he experienced the living conditions of marines in the field. "We slept outdoors in simulated war situations," he recalls, "using each other as patients."

Ryder satisfied that tour requirement and left Camp Lejeune for the Bethesda Naval Hospital, where he spent 4 months working in the center's intensive care recovery room.

But he couldn't sit still for long and volunteered to be a company corpsman for the Marine OCS (Officer Candidate School) program. "Some corpsmen never get out of the hospital ward. If you don't do a little bit of independent duty, your chances for

learning medicine are reduced," he says.

After the program ended, Ryder returned to Bethesda to finish his tour of duty there, and in 1982, he reported aboard the tank landing ship USS *Tuscaloosa* where he is currently one of three corpsmen.

Ryder still treats his old marine friends, who are embarked on *Tuscaloosa* when the Seventh Fleet ship is deployed to the Western Pacific. Accustomed to field operations, Ryder reasons, marines are somewhat out of their element in a sailor's world. "They get seasick; they're tense and sometimes they walk into things."

Ryder does it all aboard the San Diego-based vessel, from pest control in the galley to bacterial analysis of the drinking water. At sea he treats everything from sprained ankles to common colds. "It's hard to single out the most frequent ailment," he says. In two cases he recommended that the ship evacuate, by helicopter, two patients whose medical problems were beyond the scope of his training. In both cases (an appendicitis patient and a shipmate afflicted with seizures) the men were transferred and received proper treatment in ample time.

Sometimes, after Ryder has seen all his patients and the workday is over, he prescribes his own therapy, "doodling." Above his desk, a portrait of a shipmate's son, a wintry upstate New York scene, and a sketch of a girl brighten an otherwise gray environment. These creations and a seasickness chart he devised matching effects on the human body with movements of the ship are proof of a restless, inventive mind.

Ryder, whose father was an Army medic during the Korean and Vietnam wars, has visited four Korean ports, several Japanese cities, Hong Kong, the Republic of the Philippines, and



HM3 Ryder displays one of his creations, a portrait of a shipmate's son.

Hawaii—all on his maiden voyage aboard *Tuscaloosa*.

The importance of his job is underscored by the fact that the ship cannot get underway without at least one corpsman aboard. The Navy recognizes his critical role. Ryder's supervisor, HM1 Kevin Amstutz, praises his ability to perform tasks that many first and second class petty officers normally tackle. As a result, Ryder was meritoriously advanced (promoted without taking the advancement test), last December.

Travel, job satisfaction, and recognition all are obvious stimuli to fuel an active mind but Ryder's first love is still practicing medicine. "The Navy gave me the chance to get involved with medicine without going through 8 years of college," he notes. "And medicine is never dull. I can sum up my job in one word—challenge." □

—Story and photos by JO2 Glenn H. Jochum

Right: Ryder examines Operations Specialist Clifton Jackson in Tuscaloosa's sickbay.



USS Tuscaloosa (LST-1187) heads for a pierside berth at Subic Bay, Republic of the Philippines, during a recent port visit.

USS *De Wert* Named for Hospital Corpsman

USS *De Wert*, a guided missile frigate launched 18 Dec 1982, is named for a heroic hospital corpsman.

Richard De Wert, who died during the Korean conflict in 1951, was

born in 1931 in Taunton, MA, and enlisted in the Navy in 1948. After instruction at the Hospital Corps School, Great Lakes, IL, and several other assignments, HN De Wert deployed to Korea with the

Second Battalion, 1st Marine Division in early 1951.

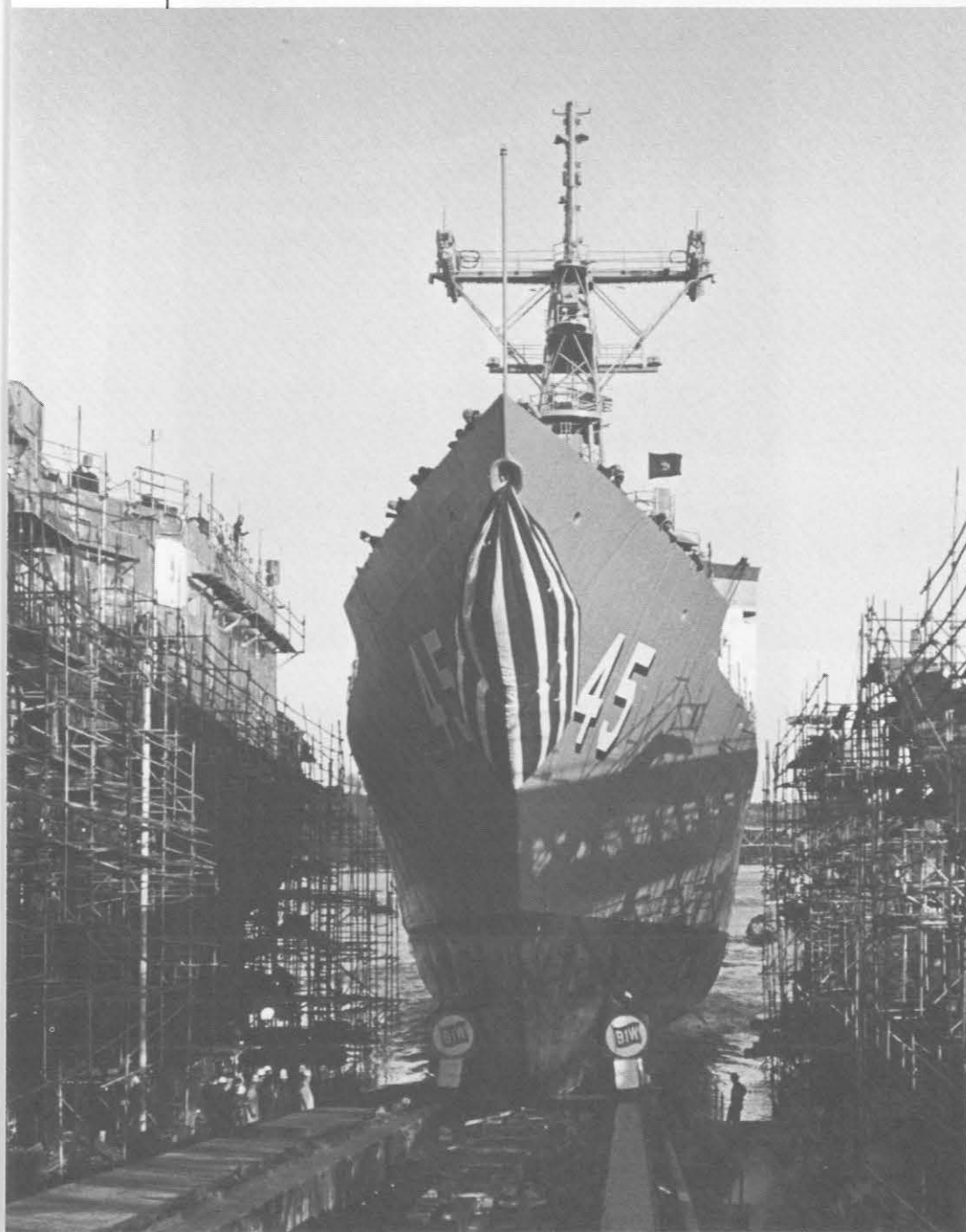
On 5 April 1951 De Wert was killed by a burst of enemy machinegun fire, while administering first aid to a fallen marine. That injured soldier was the fourth whose cries for help De Wert answered during the siege, while ignoring his own multiple wounds.

In 1952 then Secretary of the Navy Dan A. Kimball awarded the Medal of Honor posthumously to HN De Wert, citing "conspicuous gallantry . . . above and beyond the call of duty . . . courageous initiative, great personal valor, and heroic spirit."

Built by Bath Iron Works in Bath, ME, the 445-foot *De Wert* is designed for defense against submarines, aircraft, and surface ships. She has a crew of some 14 officers, 15 chief petty officers, and 153 enlisted personnel.

De Wert's launching in December featured Congressman Larry P. McDonald (D-GA) as its principal speaker. Reta C. Kennedy of Mesa, AZ, Richard De Wert's cousin, was the ship's sponsor.

The first vessel named for a Navy hospital corpsman was USS *Williams*, launched in 1980. It honors the memory of PHM Jack Williams, who won the Congressional Medal of Honor for giving his life while caring for others on Iwo Jima during World War II.



USS *De Wert* (FFG-45)

The Inimitable Surgeon Pleadwell

LT Daniel A. Wilbur, MSC, USN

This article is based on the Frank Lester Pleadwell papers in the Naval Medical Command Archives. Pleadwell's journalist-friend is fictitious.

Some folks back home in Taunton, MA, might have remembered the young boy who scurried across their yards in the morning on his way to school; most would not. The adult now projected a statesman-like countenance, every crevice of his expression seeming to tell a story of both success and failure.

It was Friday evening, 2 Dec 1910. My attendance at this posh extravaganza was really no coincidence; because I was a journalist, my appearance was quite expected. No expense had been spared in preparing the Guildhall, pride of the City of London and favorite meeting place of the Lord Mayor and Lady Mayoress. I made every effort to mask my bourgeois background as I briskly ascended the stairs. The doorman opened the doors (themselves oaken masterpieces) and I was dazzled by the colorful splendor of regal uniforms and accouterments.

Not accustomed to favoritism, I felt somewhat uneasy being ushered to one of the principal tables. It seemed as though some of my recent literary work had found great favor in the royal community, and that night I was to occupy a seat of honor. My place was at the "F" table in position 15 and faced directly that of CAPT Frank Lester Pleadwell, a rather distinguished looking American naval officer.

I was fascinated by this captain and his penetrating gaze, a look that

seemed to perceive all and yet place everyone about him at ease. Our evening exchanges eventually led to a friendship that would last for many years.

A Presidential Introduction

In 1892 Surgeon Pleadwell earned his medical degree, cum laude, from Harvard Medical School and, for reasons he never communicated, chose to pursue a career in the U.S. Navy. He adapted well to his decision and in 1896 was appointed assistant surgeon, beginning a naval career that extended 33 years, 11 of which he spent at sea.

Through an exchange of close personal letters, mutual relationships, and an occasional scheduled rendezvous, I followed the career of this physician whom I referred to in my papers as a "universal" man. That social finesse, apparent at our first meeting in 1910, was refined over the years. On 18 Aug 1916, Theodore Roosevelt wrote him an introduction to Sir Arthur Lee:

"This will introduce Dr. F.L. Pleadwell, Surgeon in the U.S. Navy, a friend of mine and my family's. Under Surgeon General Rixey, he was in attendance upon us at the White House. He is in the best sense of the word an American officer and gentleman, also trustworthy in every sense."

With this impressive presidential endorsement, Pleadwell began his duties at the American Embassy in London and from that diplomatic base, launched a picturesque European tour of duty.



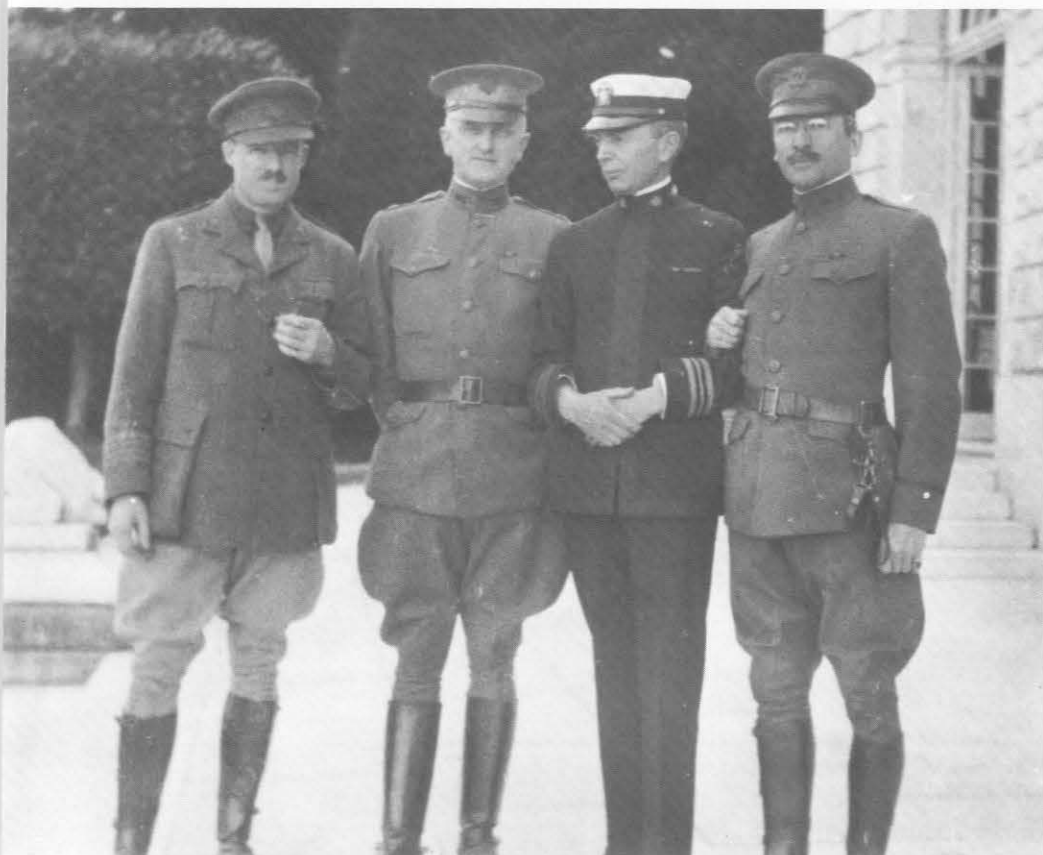
Frank Pleadwell, physician-officer-diplomat, struck this pose for his diplomatic passport.

Medical Observer

At first glance, one could scarcely imagine him cast in any role other than the practice of medicine or that of a benevolent teacher. However, as a medical observer, he relentlessly sought an exchange of information between himself and the medical officers on the various battle fronts. Surgeon Pleadwell quickly gained a reputation at the isolated field hospitals as a conduit for information and current events.

Throughout the war years, I often saw him behind his massive mahogany desk in the Embassy receiving bat-

LT Wilbur is a manpower analyst, Manpower Division (MEDCOM-44), Naval Medical Command, Washington, DC 20372.



Surgeon Pleadwell placed great emphasis upon friends and communication.



Millicent, Duchess of Sutherland, was one of Britain's leading social activists/humanitarians and confidante of Pleadwell during the early years of his European tour.

tered and torn communiques from the fronts. On one such occasion, a curious thing occurred. That day, he received what was to be the first of a series of letters. A physician had thanked him for news of the Carrel-Dakin procedure for the treatment of wounds. Pleadwell became ebullient as he repeated the words "miraculous" and "quite a first." What the physician described was the effectiveness of a simple but remarkable medical procedure developed in 1912 by two American chemists, Alexis Carrel and Henry D. Dakin, a technique for which they received the Nobel Prize.

The Carrel-Dakin procedure was being tested for the first time on the battlefields of France. Wounds were opened, and after the removal of dead tissue and foreign matter, the injuries were irrigated repeatedly with a solution of chlorinated soda modified with sodium bicarbonate. It appeared that

this method was changing the nature of battlefield medicine.

As Pleadwell neatly folded the letter, I somehow sensed that the doctor-diplomat imagined himself in the trenches, on the ambulances, and in the field hospitals caring for the "sons of liberty."

Touring the Fronts

What I felt that day came to pass. Two years after Pleadwell received this letter he embarked on an exhaustive tour of the front. As Attaché, he assisted the British in solving problems of medical organization. Pleasant, cordial, and of course, diplomatic, Surgeon Pleadwell seemed always to project a methodical approach to his inspections as if he somehow knew their outcome would continue to be of great significance. The tours included both military and civilian hospitals, ships, and field installations of the British, French, and Italians. Pleadwell gathered invaluable information and forwarded his reports to the British Office of Naval Intelligence.

Once it became known that Surgeon Pleadwell had begun a tour of "Inspections," letters from virtually everywhere flooded the Embassy requesting his presence. One such plea came from Millicent, Duchess of Sutherland, daughter of the Earl of Rosslyn, and one of the most socially active women in England. On 24 Feb 1917, she wrote:

"Where are you? We have been expecting you here, do come. I do not expect we are going to make any lead-way against the prejudice of our British Surgeons at home, we can say that we consider the result of this Carrel-Dakin document almost miraculous!"

Some of the highest ranking officials in the war effort noted Pleadwell's talents. On 5 June 1917, Vice Admiral Sir Arthur W. May, Medical Director-General, British Navy wrote:

It not only has been my duty to help you when I could, but also it has been a great pleasure to me to do so. Quite apart from the personal

pleasure it always is to work with a congenial spirit, there has always been the idea that the more we two English-speaking nations work together, and the closer our union becomes, so much the better for ourselves and the rest of the world. I hope sincerely that this will draw England and America closer than they have been since we parted long years ago. Your government was at any rate wise in their choice of an agent to help to this end.

The U.S. Government had chosen Pleadwell before. In 1909 he represented the United States in Paris at the Second International Conference for Revision of Nomenclature of Diseases and Causes of Death and, that same year, attended the Twelfth International Congress on Alcoholism in London. Clearly, his stately but congenial spirit enabled him to assist in the development of the British Medical Service in 1916.

In following Pleadwell's excursions, I found the messages of appreciation that came after his visits remarkably

similar. Sometimes they were all too graphic. One, from a regimental surgeon at Verdun, provided some insight into the horror of trench warfare. The year was 1918. Since the beginning of the war and Frank's last visit, the lines had remained stable despite the initial and ghastly struggle that was staged in that sector. As a result, activity was confined mostly to excursions into no man's land and refining and strengthening the firing trenches. The allies launched several raids against German positions and the enemy retaliated with some of their own.

The physician went on to describe a recent attack. At 0400 incoming gas shells caught many men asleep. Almost all those evacuated during the day were due to the effects of the gas. Thirty-three deaths occurred in this group from secondary pneumonia (pulmonary edema). The majority

who survived were not returned to the regiment as they never recovered sufficiently to perform regular duty. Evacuations of cases having delayed reactions continued for several days.

The regimental aid station of the Sixth Marine Regiment, housed in a dugout on higher ground off the main road, was hit several times during the early morning. The gas concentration of the outside air was so heavy that gas masks had to be worn by personnel underground as well as outside.

From dark to early morning, the medical staff worked with poisoned men. They wore masks with mouthpieces and nose clamps which precluded conversation and interfered with breathing and vision. It was a difficult and distressing experience. Moreover, the arrival of patients who had acute pulmonary edema had thrown away their respirators in their efforts to breathe.



Italian soldiers crowd a bunker during a lull in the fighting.



Compromises in sterile technique were inevitable when treating wounds in the trenches.

In a single company of 250 men, 235 had to be evacuated as fast as ambulances could be loaded. Of this number 11 percent died within 72 hours.

Consultant in Operational Medicine

But for a few letters of this kind that Pleadwell shared with me, our communication was sketchy as he pursued his inspection tours during 1916 and 1917. It was not until 19 Dec 1917 that

I became aware of his desire to recapitulate his experiences to the rest of the medical world. As we chatted, he seemed compelled to draw from me every aspect of my own literary insight. During the next few years, with my occasional recommendations, he was successful in publishing numerous articles: "Sanitation in Camps and Hospitals on the British Front in France" (1918), "Naval Ambulance Trains Observed in Great Britain" (1919), "British Ambulance Trains" (1920), and "Types of Motor

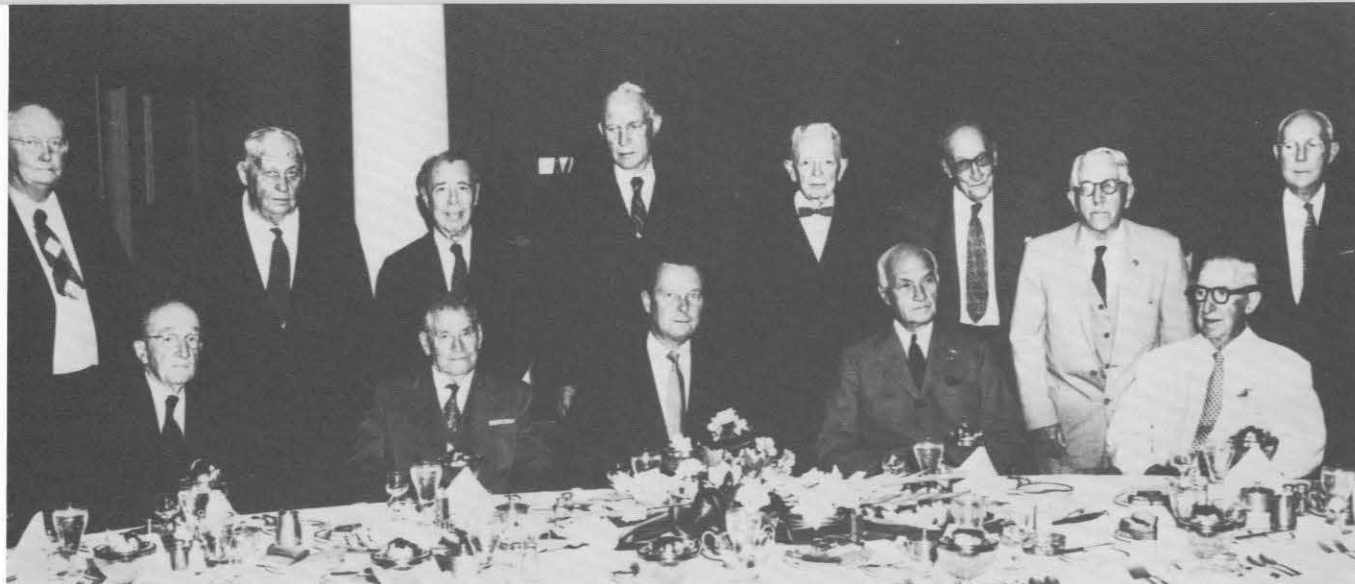




Above: Field hospitals represented one of the primary echelons of complete casualty care. Left: Activity was constant at the Vallone field hospital on the Italian front.



Photos from NAVMEDCOM Archives



An 83-year-old Frank Pleadwell (standing fourth from right) attends a dinner at the Pacific Club in 1955 honoring those members who had reached their "Diamond Jubilee." Pleadwell spent his retired years as a resident of Honolulu.

Ambulances Observed Abroad" (1920).

The publication of these articles won numerous accolades over the next few years. They clearly substantiated the fact that Surgeon Pleadwell was regarded as the contemporary authority on operational medicine. I'll never forget what it was like to walk into his office, a chamber which gave the appearance of a medical museum. Frank's collection of what seemed to be every manner of field medical artifact imaginable was astounding.

Surgeon Pleadwell's contributions came at the end of an era. The decimation of Europe's manhood on the battlefields of France marked the death of innocence and the temporary emergence of America from isolationism. The royal dynasties of Europe would never return and the war would effectively shape the course of the world. Pleadwell's undying ability to achieve results convinced me that any thorough historical analysis should incorporate individuals and their singular accomplishments.

As time passed, my duties carried me elsewhere, but I found the relationship with my good friend affected the content of my writing. Even at times when we lost contact, his wife, Laura, would write to inform me of his involvement. Frank's assignments continued to escalate in importance to

include medical aid to VADM W.S. Sims, USN, Commander of U.S. Naval Forces operating in European waters.

On 30 June 1917, we were reunited at a dinner and smoker given in honor of Admiral Sims. Subsequently, Pleadwell was recommended for the Navy Cross by Admiral Sims "in consideration of meritorious service rendered the United States during the 'Great War.' "

Pleadwell's duties next took him to the Naval War College from which he graduated with honors on 24 May 1920. I vividly recall what I'm confident he perceived as his pinnacle of achievement. In the early part of 1921, Pleadwell became president of the Association of Military Surgeons of the United States. It was a honor for me to cover the 30th annual meeting of the Association in Washington, DC, from 12 to 14 Oct 1922. The president's address, "The Association in Retrospect With Suggestions for the Future" was memorable. It was obvious that his skillful mastery of diplomacy had served to catapult the respect of the Navy and of the United States far into the international scene. As he spoke, I could not help but recall the thoughts of Thucydides, the Greek historian:

"It will be enough for me . . . if these words of mine are judged useful by

those who want to understand clearly the events which happened in the past and which (human nature being what it is) will, at some time or another and in much the same ways, be repeated in the future."

Pleadwell too saw himself as an historian. He somehow knew the recent conflict he had experienced and meticulously recorded had not been the war that would end all wars.

On 23 Feb 1957, CAPT Frank Lester Pleadwell, MC (Ret.), died at Tripler General Hospital in Honolulu. I assisted Mrs. Pleadwell in assembling his papers before she donated them to the Bureau of Medicine and Surgery Archives in Washington, DC. In going through the notes and artifacts, it seemed quite appropriate to discover the tattered manuscript of his address to the Association of Military Surgeons of the United States in 1922. Summarizing his speech, Pleadwell had closed with a quotation from Browning: "The common problem, yours, mine, everyone's, is—not to fancy what were fair in life, provided it could be—but, find first what may be, then find out how to make it fair up to our means." □

Dean's Welcome Remarks to the Class of 1986

CAPT John B. Henry, MC, USNR

This week, you will begin formal studies leading to the degree of Doctor of Medicine. We have no doubt, based on the screening and scrutiny you have undergone, that you will be doctors. We know you have the ability. You must demonstrate the discipline and dedication. Today, you have vision, a goal, an ideal. In the next few weeks, you may be able to see as far as an anatomy practical or a biochemistry quiz. Somehow, being a doctor has been replaced by becoming one, and all too quickly the lofty thoughts and humane motivations almost amorphously disappear. We don't discard them, we just lack the time to tend to them, and, like a garden, untended and uncultivated, our dreams become overgrown, tangled, and choked.

Daydream for a moment. Fantasize and let your mind wander. What are you doing here? What do you want to accomplish? What is your dream? Let me sketch one for you. You are about 23 years old and have two brothers or sisters, both in school. You're a good student, always stood out a little from your classmates because you had good grades and everyone knew you wanted to be a doctor. Folks admired you a little more than the rest. Your parents were proud of your aspirations, encouraged you and agonized with you during those ominous days when you waited for the mailman. You're from New York or Los Angeles or

Camp Hill, PA. You're healthy, even athletic. You run or bike or take aerobic dance. You're a nice person. Life has been relatively good to you, and now you want to give something back to life.

You have a dream. You will take on the burden and responsibility of 4 years of intensive study, of long days and longer nights. You will sacrifice a portion of your social life. You will not see as much of your friends. You will eat a lot of cafeteria food and you won't have much money—because you want to be a doctor. You sincerely want to help people. You also want a family of your own and you want to be able to support them. You want some of the good life, and that's okay. Medicine can provide a good income. The sacrifice will be worth it.

In 4 years you will have a sizable debt and a medical degree. You will face the anxiety of acceptance into a residency program. Will you receive your first choice? Will you be able to go back to California? Will you become an internist? Will you succeed? Will you be a good doctor? Will you fulfill your dream?

Am I very far from the truth? Can you identify with what I've said? If I've described you or your dream, it's not good enough! It's not that easy and it's not that comfortable—not anymore. You're not Rick Springfield, I'm not Marcus Welby, and this isn't General Hospital. The glamour of the white coat wears off quickly when faced with injury, disease, poverty, depression, and death. These are things you must think about now. They are not pleasant thoughts, but in a society like ours, in an age like ours, a physician's responsibility is ever increasing.

Responsibility—the root of the word is "response"—your response. Your performance will be evaluated by our faculty and later by your patients and peers. Performance is measured by response—how well and how quickly you accomplish things and how you care for your patients. Today's world is swarming with need: in Calcutta, the destitute; in Thailand, the refugee; in Africa, the starving; in the rural South, the ignorant; in Washington, DC, the drug-addicted.

You will eat a lot of cafeteria food and you won't have much money—because you want to be a doctor.

None will help pay for your child's college education. Medicine can be shortsighted and elitist. We become embroiled with appointment schedules and insurance forms. There is nothing wrong with financial security, 2.3 children, and a station wagon. But being a physician means that the burden of deciding between your need and someone else's is more acute. Your obligation is greater. Today's physician can no longer sacrifice and struggle only through medical school; some of you will be called to sacrifice and struggle through life. The range of involvement is limitless, from inner-city clinics to Third World slums.

Of course, not all of you have a calling, and many of you who do will not respond to it. You must make peace with yourself, but if one of you

Dr. Henry, Dean of the Georgetown University School of Medicine, drills with Medical Contingency Response Unit 306, NAVREDCOM Region 6, Washington, DC. Reprinted with permission from *JAMA*, the Journal of the American Medical Association, 249(12):1589-1590, March 25, 1983. Copyright 1983, American Medical Association.

spends a year in India, if one of you establishes a clinic in El Salvador or Nicaragua, if one of you helps the street people of New York or the drug- and alcohol-addicted, if you treat the ravages of poverty and hunger, then a nucleus is formed from which the entire medical profession benefits. More important, however, than living up to the expectations of your profession is living up to the expectations you have of yourself. Discerning the

Performance is measured by response—how well and how quickly you accomplish things and how you care for your patients.

difference is your challenge: Does your personal dream include the selfless dedication the profession of medicine will ask of you?

Another thought I would like you to consider deals with a different type of selflessness and dedication. I am referring to research. The investigative career in medicine appears to be in a precarious position. Federal funding for grants and contracts has dwindled, making competition all the tougher. Traditionally, researchers have not enjoyed the financial satisfaction of their clinical colleagues. Hence, the debt incurred in undergraduate medical education may appear to be excessive when contemplating a career as a clinical investigator or basic scientist in academic medicine. The laboratory seldom seems to beckon with the same drama and excitement as the hospital, but let me assure you that they are there. The laboratory and the classroom are the parents of medicine. It could not have been born without them. All that this profession is and has become is based on investigation and research. Someone, somewhere, sometime had an inquiring mind and the intelligence and stick-to-itiveness to labor long hours with one goal in mind—discovery! And it is their dis-

coveries and their accomplishments that enable us to treat our patients and practice our profession. We would have no knowledge to impart had someone not investigated. The clinician receives the gratitude, undying affection, and applause of his patients, but his colleagues know all too well that he has, technically, put into "practice" the fruits of someone else's "labor." I like to think that makes good sense etymologically, for the words "practitioner" and "laboratory" imply practice and labor.

The studies you commence this week will be your first exposure to the basic sciences. This is where you develop the thirst for discovery, the quest for information, knowledge, and understanding. This is where the inquiring mind is formed and impossible dreams are conceived. Don't be shortchanged by thinking medicine begins a year and a half from now when you put on a white coat (with a conspicuously visible stethoscope protruding from the pocket) and head for the hospital. You have all heard the overworked expression, "Medicine is both an art and a science." That is absolutely true. If one is missing, the other must suffer. The scientist is in the laboratory and the artist is in the hospital or clinic, and you'd best be an

Our profession is a regenerative one, and we are responsible for imparting our knowledge, skills, and art to those who will come after us.

expert at both if you are to call yourself "physician." Our goal is to prepare you for the complicated role of a dedicated, scientific-thinking, humane physician in a vastly complex society.

I urge, and I personally hope, that some of you will consider a career in academic medicine. In becoming a doctor, you automatically become a teacher. Our profession is a regenera-

tive one, and we are responsible for imparting our knowledge, skills, and art to those who will come after us. We are faced with a projected shortage of MD-academicians. As our next generation of physicians, you must fill that need. An academic career will not pay entirely for your children's higher education, but like the selflessness I described before, it is the pulse of our profession, and we cannot proceed without it.

Our advanced technology poses another problem. We are preoccupied with new equipment, new diagnostic tests, new procedures. How fortunate we are to have come so far, but have we begun to operate under the law of diminishing returns? Do we forfeit the reassuring touch, the available time, the quiet listening for the sake of technology, or, worse yet, do we expect the technology to replace the personal qualities essential to a good physician-patient relationship? Remember, the skill to be a physician is not found in the new technology. It is found in your hands, your mind, and your heart.

If you are uneasy about my remarks, then I have succeeded at least in making you question your motives, and it is you who are questioning yourselves right now who will be, in the words of Sir William Osler, "compleat physician." You have Tom Wolfe's proverbial "right stuff" and it will serve you well. Complacency will get you nowhere as of tomorrow.

Inquiry, work, and communication are everything. Not only should you work hard in medical school, and, indeed, you will as a physician, but play hard. It is very easy to allow medicine to overwhelm you. Throughout medical school you will feel the pressure to learn—to learn all you can. When you begin your work, there will be additional pressures: to serve and care for your patients, to keep abreast with current literature and emerging technology, and, hopefully, for some, to initiate new discovery and seek out improved methodologies. But you must remember to play. The stress inherent in the medical profession is well documented. Ten percent of you

will become "impaired physicians" through drugs, alcohol, or stress. Management of that pressure must be acquired now. Do not underestimate recreation or overestimate your own abilities. The time you spend in sport, music, relaxation, crafts, or whatever your outlet, is valuable. Allow time for it and you will be a healthier physician able to deal with the stresses society and your profession will place on you. And don't forget that prayer can help, especially when the demands seem excessive and your patients are so sick and in such need.

On a bit more practical note, as your dean, I am, of course, available to each of you if not always immediately accessible. The doors of all the faculty are open to you. You may have to make an appointment, but you are

And don't forget that prayer can help, especially when the demands seem excessive and your patients are so sick and in such need.

welcome to come by and discuss whatever matters concern you, be they academic or personal. As you come to know our faculty and staff, I think you will find that they will be your friends as well as your instructors. We are all here to help you learn. We also have members of the clergy to respond and assist you in your spiritual development. There will be other opportuni-

ties to promote student-faculty interaction, which I hope you will seek out and take advantage of.

Again, don't overlook a career in academic medicine as a physician, scientist, clinical investigator, or clinical instructor that offers the opportunity to enjoy the excitement of research and teaching as well as the practice of medicine.

I welcome all of you to Georgetown, to your new home, to a new chapter in your life, to a rewarding period of growth. Remember the poor and all who suffer. They have become your responsibility. Do not fail them or the trust that has been placed in you by the great profession you will serve. You are our next generation of physicians. May God guide you and bless your work. □

First Male Nurse Selected for Captain

Being the first male nurse in the 75-year history of the Navy's Nurse Corps to be selected for captain doesn't faze C. William (Bill) Cote one iota. Not that the 48-year-old former battleship sailor isn't proud of the accomplishment. It's just that the easy-going Springfield, MA, native is taking it all in stride.

For the past 2 years CAPT Cote, a former first lieutenant in the Air Force, has been the corps program coordinator on the staff of Newport's Officer Indoctrination School (OIS). OIS is one of eight schools operated by the Naval Education and Training Center (NETC).

Although the Navy Nurse Corps dates back three-quarters of a century, there have been male nurses in the organization only since 1965. It was then that Cote opted for an interservice transfer as a first lieutenant in the Air Force to a lieutenant (junior grade) in the Navy, thus becoming one of the first half-dozen male nurses in the Navy.

How did he wind up in the Air Force after serving as a hospital corpsman on the battleship USS *Iowa* and USS *New Jersey* and for a year with the First Marine Division in Korea?

"I got out of the Navy in 1956 and entered the Utica

State School of Nursing in Utica, NY," he said. "After graduating in 1960 with a diploma in nursing, I got a direct commission as a second lieutenant in the Air Force."

CAPT Cote, a graduate of Pleasant High School in Schenectady, NY, served in the Air Force at Wilford Hall, San Antonio, TX, and at Westover Air Force Base, Chicopee, MA, before switching back to the Navy.

Prior to his tours on the battleships, which took him on two midshipman cruises and several NATO cruises in the Atlantic, he served at the Naval Hospital, Coco Solo, Panama, CZ, and at the Navy Dispensary, Roosevelt Roads, PR.

A 1966 graduate of the former Women Officers School in Newport, CAPT Cote served as a staff nurse at Bethesda Naval Hospital and the Naval Hospital at Guam. In 1971 he received a bachelor of science degree from Syracuse University. From there, it was on to Great Lakes, where he served as an instructor for 4 years before putting in another 4-year tour as nursing supervisor at NRMC Newport, RI.

—PAO, Naval Education and Training Center, Newport, RI.

75 Years of Caring



France 1918: Navy nurse with two of her patients.



USS Consolation, Pacific, 1944: LT Loretta Diemert attends a patient.

Iwo Jima, 1945: Flight nurse ENS Jane Kendiegh aids a wounded marine.

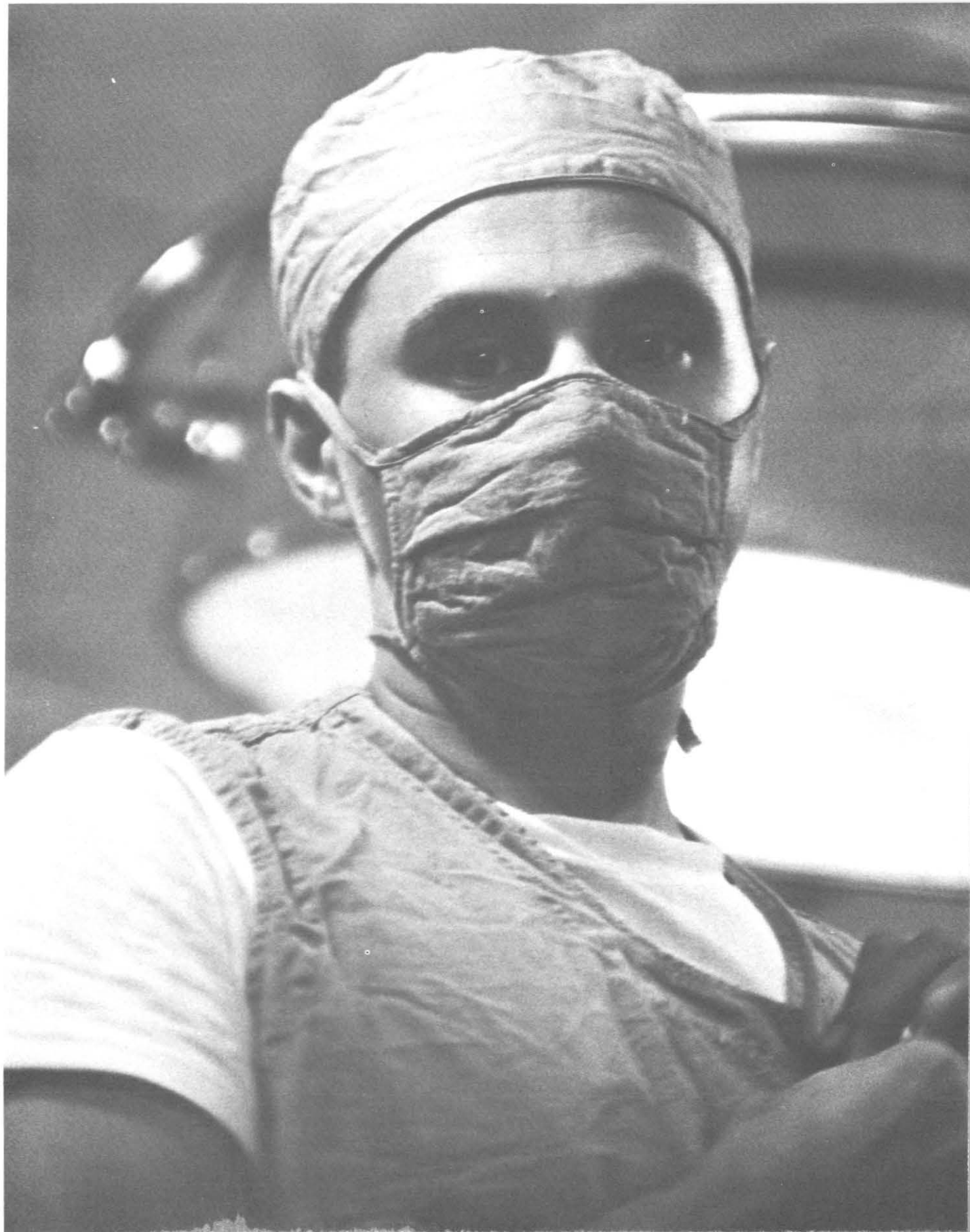




Afragola, Italy 1952: *LT Betty Rupert helps feed children at an Italian orphanage.*



USS Sanctuary, off the Vietnamese coast, 1967: *LTJG K. Saunders feeds an injured Vietnamese child.*



Vietnam 1968: Nurse administers oxygen in the operating room of the station hospital, Danang.



Bethesda Naval Hospital 1983: *Anesthesiologist and operating room nurse prep a patient for surgery.*

Since 13 May 1908, as the Navy Nurse Corps song of the 1950's and 1960's described it, "the girls in white" have cared for "the boys in blue." But times have changed and so has the Nurse Corps. Celebrating the 75th anniversary of their establishment by an act of Congress, today's Nurse Corps—2,770 women and men strong—carries on the worthy tradition of providing care to support the needs of the Navy and Marine Corps both in peace and in conflict.

Nurses served in Europe during

World War I, when four were awarded the Navy Cross. In 1920 nurses were aboard the first ship built as a floating hospital, the *USS Relief*. During World War II nurses were held as prisoners of war on Guam and in the Philippines. Even as Japan's surrender was signed aboard *USS Missouri*, nurses stood by on three hospital ships to evacuate and aid the wounded. Moreover, Navy nurses contributed all of this dedicated service before 1947, when they were first designated as members of a perma-

nent staff corps of the Navy.

Since then, nurses have served aboard hospital ships off the coasts of Korea and Vietnam, boarded aircraft carriers during hurricane disaster relief missions, helped evacuate patients from Cuba during the 1962 missile crisis, and staffed station hospitals in Saigon and Danang.

With ever increasing responsibilities and a steadfast commitment, the Navy Nurse Corps of 1983 is still going strong—dedicated, caring, professional, and proud. □

Treatment of Traumatic Dental Injuries by Nondental Personnel

CAPT D.D. Antrim, DC, USN

The military physician and the independent duty corpsman are occasionally called upon to treat traumatic injuries to the orofacial structures. Impact due to altercations, training, automobile and shipboard accidents, or other traumatic events may cause chipped, fractured, or loosened teeth. In addition, the alveolus may sustain localized fractures, and a tooth may be completely avulsed. The most common injury site is the maxillary central incisor area.⁽¹⁾

Emergency treatment may be complicated by local edema, hemorrhage, or other consequences of the accident. Frequently, the patient has had few if any previous dental problems, having enjoyed excellent dental health until the mishap, but is now faced with a frightening and unpleasant situation. The seriousness may be compounded by a lack of immediately available trained dental personnel and suitable equipment and material to treat the patient.

The purpose of this article is to suggest possible modalities the physician or independent duty corpsman can initiate for temporary treatment of dental injuries until the patient can

receive definitive treatment at the nearest dental facility. The following clinical entities are discussed: crown fracture involving only the enamel layer of the tooth, crown fracture involving both enamel and dentin, crown fracture involving the pulp of the tooth, fracture involving the crown and root of the tooth, displacement of teeth, avulsion of teeth, injuries to the supporting bone, and soft-tissue lacerations.

Examination

The initial clinical examination is an important first step. It must be conducted with caution to identify the extent of involvement. Thoroughness should not be superseded by speed. Dental injuries are rarely life-threatening. The bleeding, lacerated soft tissues often look seriously injured but are not extremely uncomfortable for the patient. After ruling out or controlling concussions, possible shock, and/or bleeding problems, the examiner should check carefully for the following:

1. Injury to the soft tissue
2. Presence of foreign material in the tissues
3. Injury to the alveolar bone
4. Fractures of crown
 - a. extent of tooth structure lost
 - b. pulp exposure
5. Displacement of teeth (labial, lin-

gual, intrusion, extrusion, complete avulsion)

6. Abnormalities in occlusion

Treatment

The treatment rendered by the physician or corpsman is temporary, and the primary concern is to preserve the dentition and prevent pain. In all cases, the patient should be directed to the nearest dental facility for definitive treatment at the earliest opportunity.

In most traumatic injuries, it is necessary to use some form of anesthesia before the patient can be treated. The maxillary arch can be infiltrated by localized injections of 2 percent Xylocaine with 1:100,000 epinephrine around the involved area. The mandibular arch is not so easily anesthetized and may need block anesthesia of the inferior alveolar nerve as well as soft-tissue infiltrations. Consult a book on techniques of using local anesthesia to determine how an inferior alveolar nerve block is administered. Soft-tissue infiltration will mean an injection of 1-2 ml of anesthetic solution intraorally in the mucosa adjacent to the injured area. Medical personnel should find no difficulty in administering intraoral injections. However, some may wish to use a combination of topical anesthetics and intramuscular analgesics to control the patient's discomfort and anxiety.

Dr. Antrim is Chairman of the Endodontics Department and Director of the Endodontics Residency Training Program, National Naval Dental Center, Bethesda, MD 20814.

Crown fracture involving the enamel layer (Figure 1). If only the enamel or outer layer of the tooth is involved in the fracture, there is no sensitivity and no treatment is required. Often, the chipped area of the enamel has sharp edges that irritate the tongue. They can be smoothed with an emery board or fingernail file. Even though this type of injury causes little pain, it may not be as innocuous as it seems. If the blood supply to the pulp of the tooth has been interrupted by the trauma, future therapy by a dentist will be necessary. The trauma should be noted in the patient's dental record, and he should have a dental examination at the next opportunity.

Crown fracture involving the dentin layer (Figure 1). The dentin or second layer of the tooth is sensitive. Often, the patient will complain of pain, especially when drinking cold liquids or breathing in cold air. The simplest way to manage this complaint is to paint a coat of dental cavity varnish, if available, over the exposed dentin layer for protection. Obviously, the larger the exposed area the greater the sensitivity. If the fracture involves considerable dentin, the dentin should be covered with a sedative material, such as a thick paste of zinc oxide and eugenol (ZnOE). Temporary celluloid crowns, available in a variety of tooth shapes, can be used to hold the sedative material. They can be trimmed easily with scissors to fit the remaining tooth structure. If celluloid crowns are not available, other materials can be used as a temporary measure. A peristomal covering such as Stomahesive (E.R. Squibb & Sons, Inc., Princeton, NJ) or aluminum foil can be adapted to the involved and adjacent teeth. These materials will temporarily hold the sedative material close to the injured tooth (Figure 2).



FIGURE 1. Chipped lateral incisor. No treatment except for soothing the jagged edge of tooth. The maxillary central incisor, however, is severely chipped and the dentin layer exposed. The entire enamel layer has been lost on tooth's buccal surface.

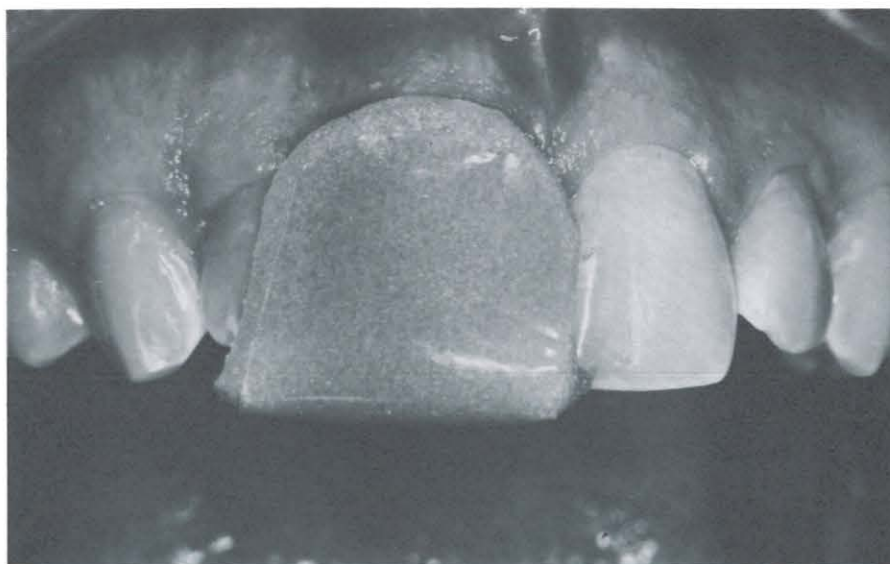


FIGURE 2. Stomahesive used to cover tooth and hold the sedative material in close approximation to the damaged tooth.



FIGURE 3. Left central incisor has a pulp exposure due to the amount of tooth structure missing.



FIGURE 4a. Maxillary central incisor with fracture involving the tooth's crown and root.



FIGURE 4b. Removal of tooth fragment reveals pulp exposure.

Crown fracture with pulp exposure (Figure 3). The treatment of traumatic pulp exposures can present a problem. Depending on what material is available, the following procedures are recommended. The exposed pulp tissue should be treated by a pulp cap for a small exposure or by a pulpotomy when the exposure is large.

Pulp capping involves covering the exposure with a sedative material, such as ZnOE, or a material capable of stimulating repair of the exposure, such as calcium hydroxide (Ca(OH)_2). A commercial dental product called Dycal (L.D. Caulk Co., Division of Dentsply International, Inc., Milford, DE) is preferred, if available. The ZnOE or Ca(OH)_2 should be mixed as a thin paste, placed over the exposure, and allowed to harden. A thicker mix of ZnOE is then placed over the covered pulp tissue. This thick mix of ZnOE can be held in place by the celluloid crown, Stomahesive, or aluminum foil as previously described.

The pulpotomy involves removal of a small amount of the pulp tissue from the crown of the tooth. This procedure is best accomplished by a dentist, with specialized instruments. The emergency situation can be handled in the following manner: The tooth must be anesthetized and isolated with a 2 x 2-inch gauze pad to prevent contamination by saliva. Using a small spoon excavator, remove any tissue that is protruding from the pulp chamber. Control the bleeding with hydrogen peroxide on a small cotton pellet. Once the bleeding has stopped, proceed as in the pulp-capping procedure. Refer the patient for definitive dental treatment later.

Fracture involving the crown and root of the tooth (Figure 4a). Often the force of the traumatic blow causes an oblique fracture that involves both the crown and the root structure. The extension of the fracture beneath the gingival margin may compromise the eventual success of treatment. Indeed, many of these teeth must be extracted because of the extent of the injury.

The problem confronting the corpsman or physician is twofold. First, the patient complains of pain whenever

the loose segment of the fractured tooth is moved. Any movement causes pain through the attachment of gingival fibers that adhere to the broken piece of tooth and through fluid movement in the line of fracture. Treatment consists of removing the loose segment of the tooth (Figure 4b). The tooth and the surrounding area are anesthetized and isolated with a 2 x 2-inch gauze pad. A curette or scalpel is used to sever the tissue from the loose segment. Remove the segment by grasping it and pulling it free with a hemostat. Once the segment is removed, the first problem is solved.

The second problem is the resultant pulp exposure often seen in an injury of this extent. The exposed pulp should be handled by pulp-capping and covering the damaged tooth, as previously described.

Displacement of teeth (luxation). Teeth can be moved out of their normal position, with or without fracture. The direction can be either labial or lingual, intruded into the alveolus (Figure 5a), or extruded slightly out of the socket (Figure 5b). Luxation of teeth usually involves the maxillary central incisor region in both the primary and permanent dentition and is seldom seen in the mandible, although it does occur.⁽¹⁾

In general, these injuries are treated by a repositioning of the displaced tooth (Figure 5c). Repositioning is often complicated by the associated alveolar bone fracture. The primary consideration at this point is stabilization. After the teeth have been replaced in normal alignment, as determined by checking how the teeth occlude with the mouth closed, some type of splint should be placed. The splint will be placed after any soft-tissue lacerations have been sutured. The attending medical personnel must use ingenuity to devise some means of stabilizing the loosened tooth. The Stomahesive and aluminum foil previously mentioned would suffice. Stomahesive would be applied in the following manner: The teeth and adjacent soft tissue should be dried with a cotton gauze. A small piece of Stomahesive is trimmed and fitted over the front and back surfaces of the

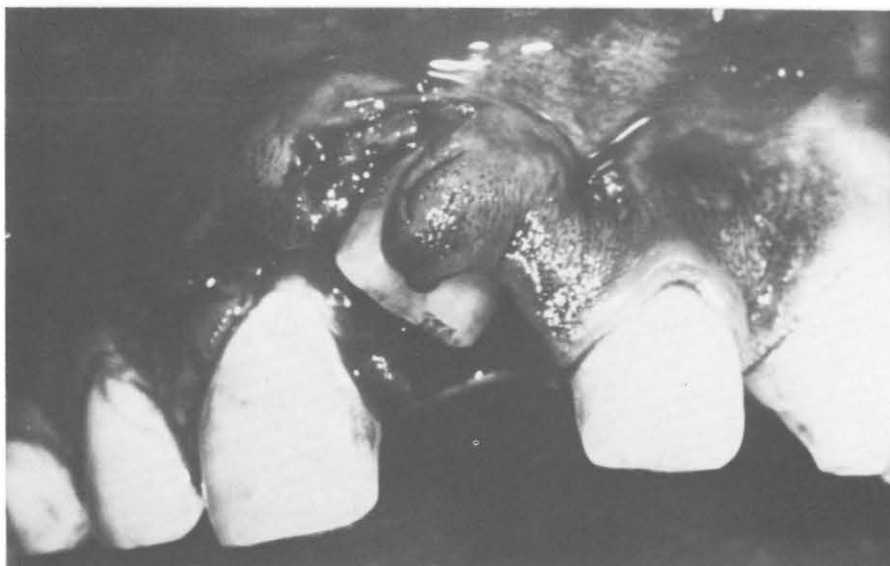


FIGURE 5a. Intruded maxillary central incisor.



FIGURE 5b. Extruded mandibular incisors, slight extrusion.



FIGURE 5c. Repositioned and soft tissue sutured.

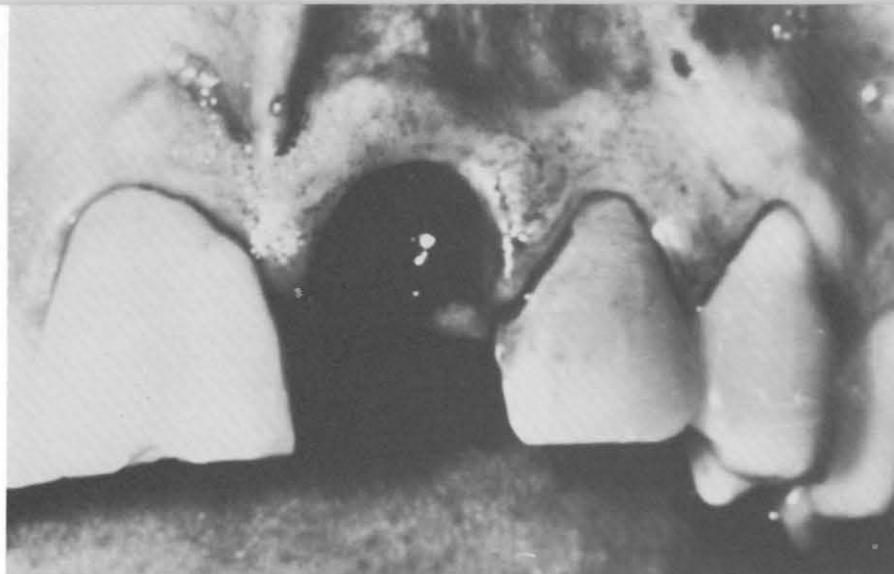


FIGURE 6a. Avulsed tooth.



FIGURE 6b. Replacing tooth in socket.



FIGURE 6c. Tooth in place. Note fractured incisal edge.

involved area. The adhesive is molded and pressed into place with gentle digital pressure. This material should then adhere to adjacent teeth and soft tissue sufficiently until the patient can be transported to a dental facility.

Avulsed teeth (Figure 6a). An avulsed tooth is one that is displaced completely from its socket. Most frequently, avulsion involves a single tooth, but multiple avulsions are encountered occasionally. Fractures of the alveolar socket wall and injuries to the lips are often seen with this type injury.

The most important consideration is getting the tooth returned to the socket as quickly as possible. If the patient reports to sickbay with the tooth in his hand, attending personnel should quickly and gently rinse the tooth with normal saline solution and return it to the socket, using the other teeth as a guide to insure proper alignment (Figures 6b, 6c). The patient usually needs no anesthesia, and *time* is of the utmost importance. If the physician or corpsman gets a phone call reporting an accident in which a victim's tooth has been avulsed, the caller should be told to replace the tooth in the socket immediately, if possible, or to place the tooth in the buccal vestibule to keep it moist until the patient can be transported to sickbay. Upon arrival, quickly return the tooth to its place and check its alignment. After sutures are placed in the soft tissue, the tooth should be splinted as previously described (Figure 2).

Injuries to the supporting bone. Injuries to the supporting bone may take several forms. The bone may be crushed or fractured. The fracture may be confined to the alveolar socket wall or may involve the underlying basal bone. Traumatic injury may mean complete fracture of the maxilla or mandible, a "jaw fracture." An assessment should be made of the extent of the injury. Any fracture other than simple involvement of the socket wall should immediately be referred to personnel trained to handle complicated orofacial traumatic injuries. Indication for serious injuries

would be (1) inability to occlude the opposing arches (i.e., the teeth will not meet), (2) mobility of the bone fragments, and (3) crepitus, or a crackling sound produced by the rubbing together of fragments of fractured bone. In severe injuries requiring extensive splinting or reduction of jaw fractures, suturing of intraoral and lip lacerations should be deferred.

Simple fracture of the socket wall can be handled on an emergency basis by the attending physician or corpsman. Fracture of the socket wall is usually associated with the dislocation of teeth. Thus, the first step after administration of local anesthesia is to reposition the displaced teeth (Figures 7a, 7b). When the teeth are repositioned, the bone should be pressed with simultaneous digital pressure (Figure 7b) on the lingual side of the arch and over the apical region on the buccal side.⁽¹⁾ This maneuver will permit repositioning of the fragment and socket wall.

Soft-tissue lacerations. After reduction of displaced teeth and bone fragments, lacerations of soft tissue may be sutured. Though it is tempting to suture immediately, suturing of all soft-tissue wounds should be left for last because suturing early in the treatment procedure limits access for repositioning procedures. Temporary splints may be applied before the patient is sent to the dentist.

Summary

Traumatic injuries to the orofacial structure may cause broken or malpositioned teeth and fractures of the supporting bone. Temporary treatment modalities have been discussed that will enable the attending physician or independent duty corpsman to provide necessary measures to prevent pain and loss of teeth. The patient should be directed to qualified dental personnel as soon as possible for definitive treatment.

Reference

1. Andreasen JO: *Traumatic Injuries of the Teeth*. Philadelphia, WB Saunders Co, 1981, pp 42, 256. □

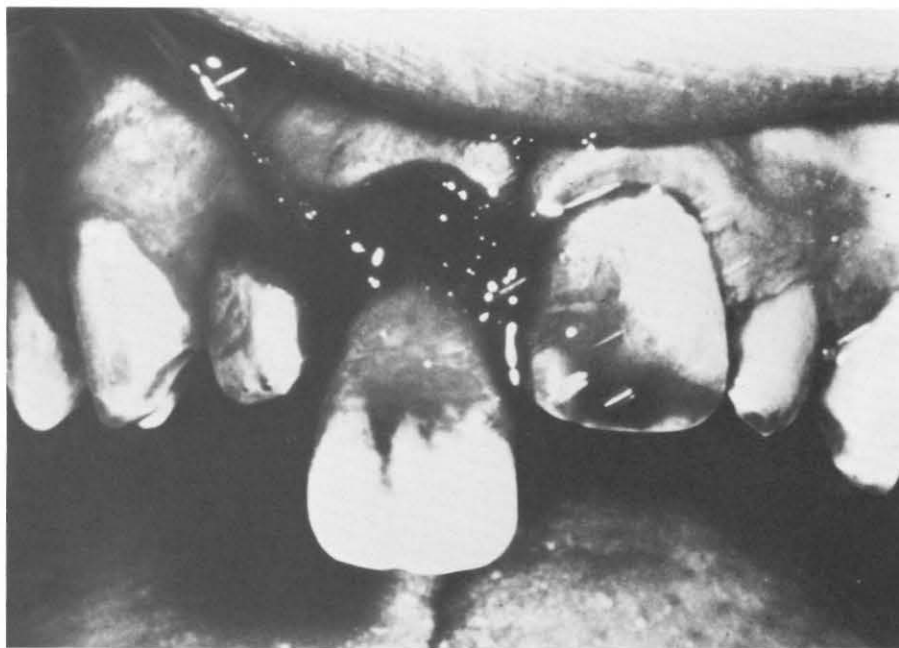


FIGURE 7a. Extruded maxillary central incisor.



FIGURE 7b. Tooth repositioned and bone reduced to proper position with digital pressure.



Corpsmen stand by during physical training.



Heat Illness

LT Bill Surber, MC, USNR

LCDR Kathy Steele, NC, USN

Military recruits reporting for basic training during the summer months have a great potential for heat-related illness. This is especially true at the Marine Corps Recruit Training Depot, Parris Island, SC, where the combination of high environmental heat, humidity, and rigorous physical training provide all the elements for heat-related illness. This article briefly details the measures taken to prevent heat illness, its immediate treatment, the initial physical and laboratory findings of the heat casualty, and the sequelae of heat illness seen during 1980-1982 at Parris Island.

Spectrum of Heat Illness

Heat cramps, a term referring to brief, intermittently painful cramps of the skeletal muscles, usually occurs in individuals already acclimatized to heat.

Heat exhaustion includes muscle cramps and symptoms such as thirst, anorexia, nausea, vomiting, diarrhea, anxiety, impaired judgment, and dehydration.

Heat stroke refers to heat pyrexia (temperature greater than 105°F), altered mental status, and the symptoms of heat exhaustion. Over the last 3 years, the Parris Island Branch Clinic has treated 48 victims of heat stroke, 466 patients for heat exhaustion, and 53 for heat cramps.

Prevention

It has long been recognized that individuals may become tolerant of strenuous work in a hot environment.

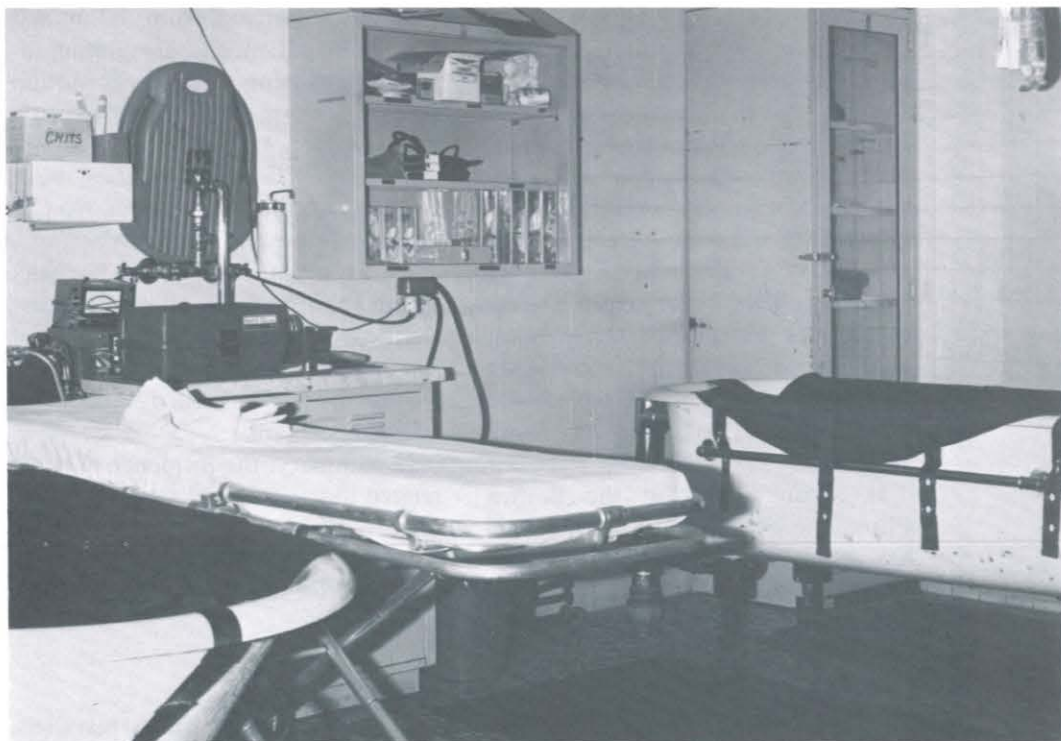
Gradual increases in both the severity and duration of exertion in the hot environment allow an individual to become acclimatized.⁽¹⁾

Recruits at Parris Island undergo physical training programs that increase in strenuousness. Those who have lived in the hot environment several weeks can perform more physical work than those who have recently arrived from cooler climates.

Factors which determine body temperature include heat, humidity, convection of solar heat, and heat generated by physical activity. From March to October the wet-bulb globe temperature (WBGT) designed to record heat, humidity, and convection is constantly monitored (Figure 1). As

the WBGT index rises, the amount of physical work done by recruits decreases. Careful limitation of physical activity during daytime high heat has prevented heat strokes during those periods.

The human body dissipates significant amounts of heat generated during exertion through sweating. The degree of hydration is an important determinant of an individual's ability to sweat. Recruits are instructed to drink at least 1 pint (475 cc) of fluid for every hour of physical activity in the heat. No heat strokes occurred in recruits drinking 4 liters (1 gallon) of fluid per day. The majority of heat stroke victims drank less than 1 liter (1 quart) per day.



Branch Clinic Cool Room

Dr. Surber is assigned to the Department of Internal Medicine, Naval Hospital, Beaufort, SC 29902. Lcdr Steele is Director of the Branch Clinic, Parris Island, SC 92140.

Initial Treatment

A critical factor in morbidity and mortality from heat-related illness is the time elapsing from the body's overheating to the initial treatment. Every effort is made to treat immediately recruits who overheat. Battalion staff are trained to recognize signs and symptoms of heat illnesses. Yearly training for all Branch Clinic personnel is conducted concerning the signs, symptoms, and treatment of heat victims in the field as well as in the Branch Clinic Cool Room.

Corpsmen are deployed to the physical training fields and accompany the troops on 10-mile marches. Each corpsman is equipped with rectal thermometers, airways, a cooler filled with ice water soaked sheets, and a stretcher and van with a driver. If a recruit collapses during physical training, the corpsman obtains a rectal temperature, assesses the victim's mental status, and applies iced sheets when rectal temperatures exceed 102°F. The victim is immediately transported to the Branch Clinic. Physical training for that particular field ceases if all corpsmen are transporting heat victims to the Clinic Cool Room.

Two tubs of iced water are maintained 24 hours a day from March to October in the Clinic's Cool Room. Upon arrival, the patient's rectal temperature is monitored, vital signs are taken, and the mental status is checked. If the rectal temperature is above 105°F, IV's are started, the patient is placed in the ice tub, and the extremities are massaged. When the rectal temperature drops to 102°F, the patient is removed from the ice tub and admitted to Beaufort Naval Hospital.

If, upon arrival at the Branch Clinic, the victim is fully oriented and has a rectal temperature of 102°-104°F, cold, wet sheets are applied until the temperature stabilizes below 101°F. If the victim is fully oriented and has a rectal temperature of 101°F or less, he is treated with a cool shower. All heat victims (excluding

heat strokes) are placed on 24-48 hours light duty and reevaluated at the Clinic. The total time elapsing from collapse on the drill field to arrival at the Branch Clinic is approximately 5 minutes.

Presentation of Heat Stroke Victims

In those heat stroke victims admitted to Beaufort Naval Hospital, the rectal temperature was less than 102°F in all 48 patients. The reduction in temperature was brought about by ice baths. All had stable blood pressure and pulse. One patient required mechanical ventilation for the first 4 hours of admission; the other 47 had stable spontaneous respirations.

Forty-six patients were alert upon arrival. Two patients were comatose initially. Most were oriented to person and time. No patient showed seizure activity.

Muscle enzymes were elevated in all but two patients, with CPK greater than 200 mg/dl; SGOT was doubled in 57 percent. Renal function was measured by serum creatinine in only 21 patients, with 20 having elevated creatinines ranging from 1.3 to 4.0 mg/dl. No patient had myoglobinuria. Five patients had serum sodium less than 135 mEq/dl; three patients had serum potassium less than 3.5 mEq/dl. EKG abnormalities were confined to sinus tachycardia. No CR abnormalities were found.

Only one of the 48 patients had persistent abnormalities at the time of discharge from Beaufort Naval Hospital. That patient had a serum creatinine of 1.4 mg/dl and persistent dysarthria on neurologic exam.

In summary, the incidence of heat-related illness can be decreased if adequate acclimatization occurs and morbidity can be effectively decreased if aggressive treatment is instituted immediately.

Reference

1. Knochel JP: Environmental heat illness. *Arch Intern Med* 133, May 1974. □

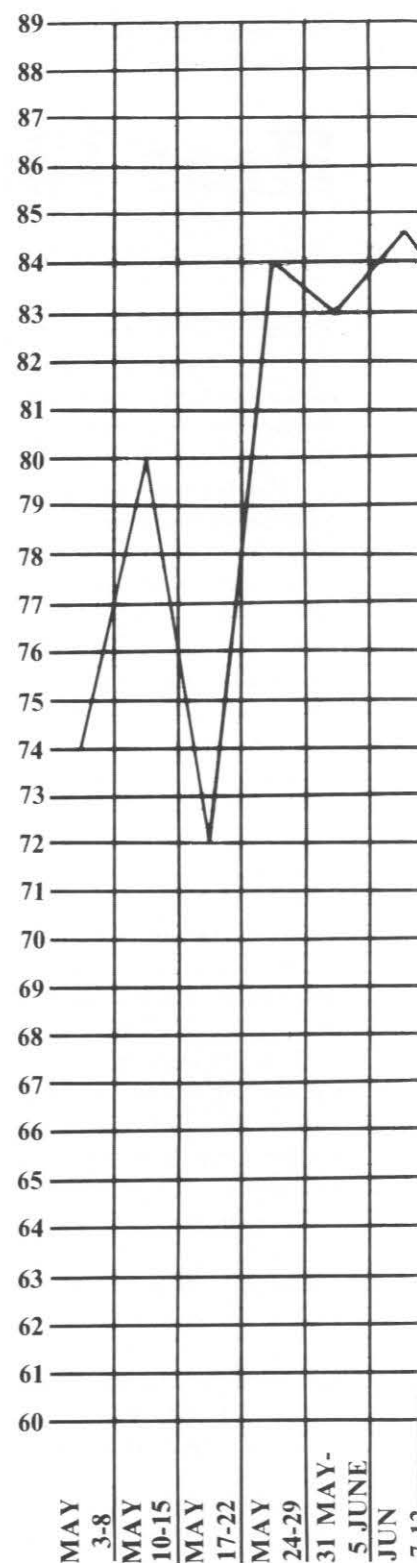
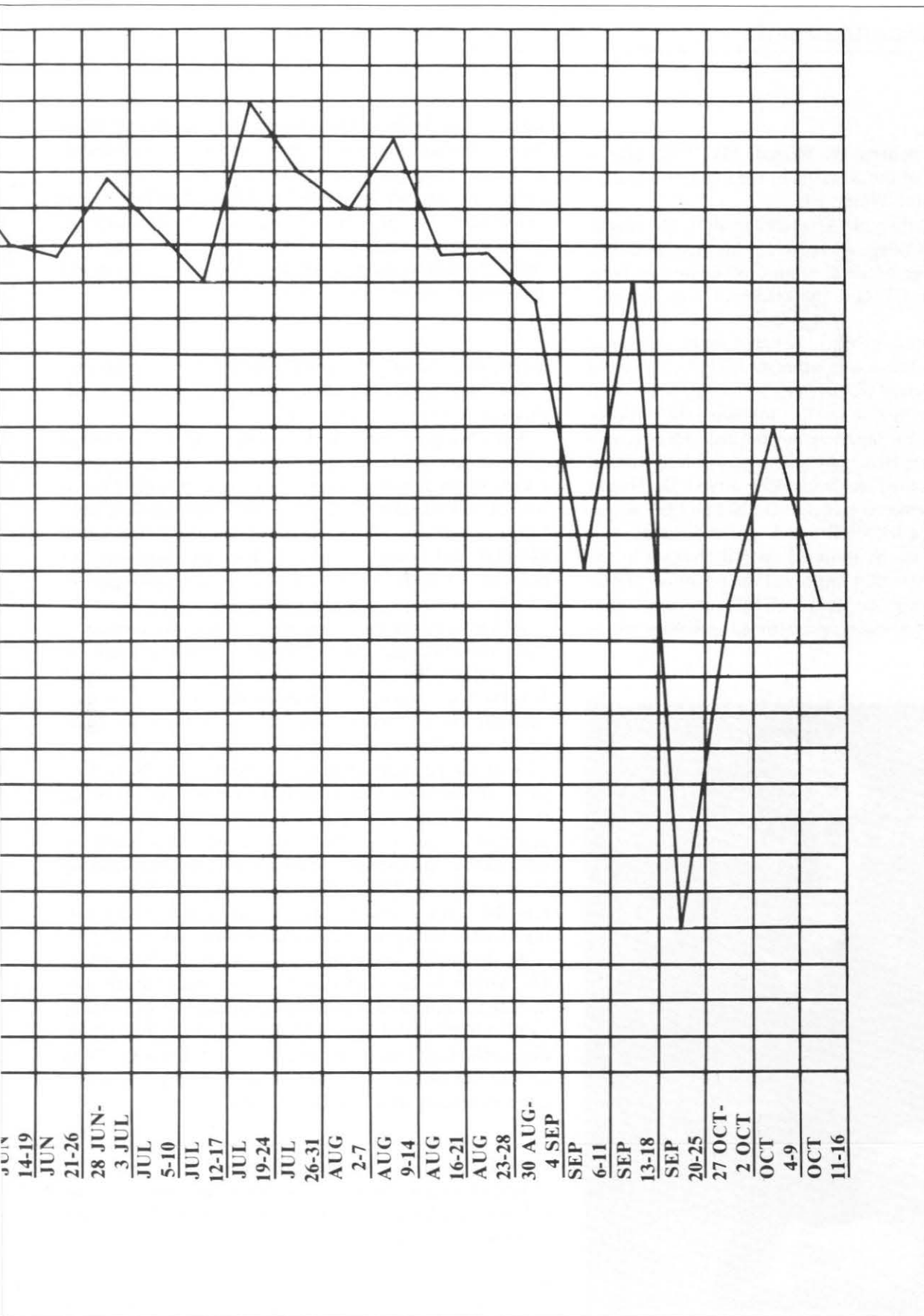


FIGURE 1. Average Weekly WBGT Readings from May to October based on a 6-day training week at Parris Island Branch Clinic.



Notes & Announcements

In Memoriam

RADM Bartholomew W. Hogan, MC, USN (Ret.), Surgeon General of the Navy from 1955 to 1961, died 17 March 1983 in Lake Wales, FL.

Born in West Quincy, MA, on 29 Jan 1901, Dr. Hogan attended Boston College and received his medical degree from Tufts College Medical School of Boston in 1925. He was appointed LTJG in the Medical Corps the same year.

Dr. Hogan's tours of duty included many ships and naval stations at home and abroad. In 1942, as senior medical officer aboard the carrier USS *Wasp*, he received the Silver Star for "heroic service" following the torpedoing of that vessel by Japanese submarines. He was also awarded the Purple Heart. After serving as Fleet Medical Officer for the Pacific Fleet from 1953 to 1954, Dr. Hogan became Deputy Surgeon General. On 10 Feb 1955 he was appointed Chief of BUMED and Surgeon General.

During his tenure he initiated several changes in the Medical Department that improved the retention of personnel by enhancing the image of Navy medicine as a career. A policy of allowing unrestricted voluntary retire-

ment for all Medical Department officers after 20 years' service was adopted, the length of sea tours was reduced, and shore assignments lengthened to provide better continuity and greater personnel stability. RADM Hogan inaugurated a vigorous building program that saw the creation of four new hospitals and promoted the improvement of professional relationships between the Navy and the civilian medical community.

Bethesda Naval Hospital Earns Accreditation

The Navy's teaching hospital at Bethesda, MD, has received a 3-year accreditation.

The Chicago-based Joint Commission on Accreditation of Hospitals (JCAH) issued its decision after a thorough review of its survey findings. "We are extremely pleased with JCAH's decision," said VADM J. William Cox, MC, Surgeon General of the Navy. "I commend the entire hospital staff. Everyone worked hard to insure that we continue to meet JCAH's standards of quality patient care."

JCAH's awards are considered the "industry standard." Navy hospitals have been accredited by JCAH since the early 1950's. "By participating in the JCAH program," VADM Cox noted, "we demonstrate our institutional commitment to maintaining the highest standards of health-care delivery."

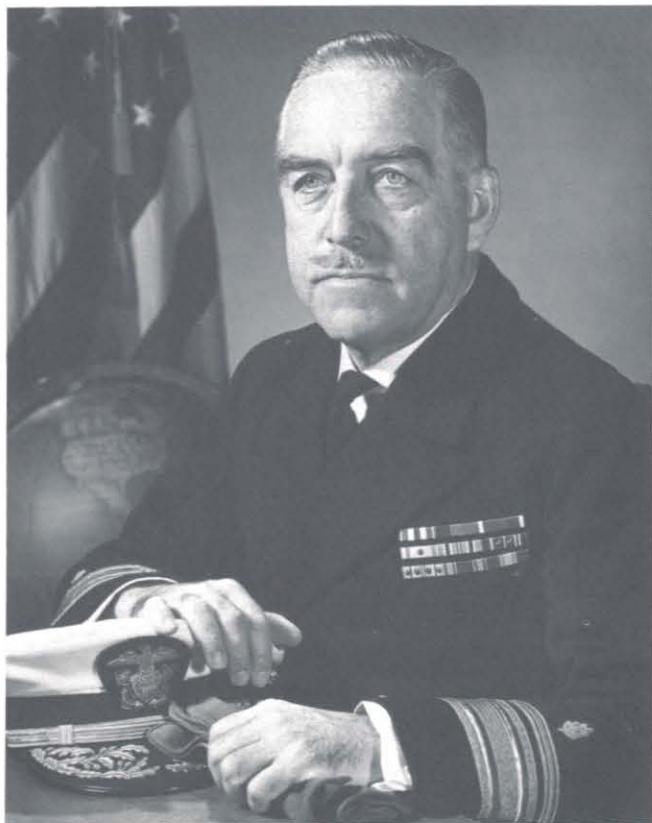
After the last regular survey of Bethesda in November 1982, JCAH identified a number of problems involving the documentation of quality-assurance and peer-review activities. Several months later, a physician surveyor returned to the hospital to monitor progress in correcting these problems. Although a 1-year accreditation award resulted, it was retroactive to November 1981, necessitating another full survey in the anniversary month of 1982.

At the survey summation conference last November, Dr. Arthur E. Levy, physician on the team (which also included a nurse and a health-care administrator), complimented Bethesda's improvement of administrative procedures essential to meeting compliance requirements. "You are doing a job that I would not have imagined could be done as quickly and as well," he said.

HSETC Correspondence Courses

Two new operational medicine correspondence courses are now available to Medical Department officers and enlisted personnel.

- **Casualty Care, NAVEDTRA 13122:** Designed to familiarize personnel with the NATO agreed upon treatment protocols for war wounded. Included are echelons of med-



RADM Hogan

ical care, mass casualty management, physiological responses to injury, and general management of injuries resulting from conventional and nonconventional warfare. Text: *Emergency War Surgery NATO Handbook*, GPO, 1975. Consists of five assignments and evaluated at ten points.

- Field Medical Service, NAVEDTRA 13124: Stresses operational planning activities of the Medical Department in support of the Fleet Marine Forces. Includes medical and dental organization, methods of support for MAGTF's in both conventional and nonconventional warfare, casualty reporting, medical regulating, combat medical supply, and training of medical and dental personnel of the Fleet Marine Forces. Text: *FMFM 4-5 Medical and Dental Support*, USMC, GPO, 1980. Consists of three assignments and evaluated at six points.

Currently, 11 HSETC correspondence courses satisfy the criteria for recognized continuing education activity for both Nurse and Medical Corps officers. A list of courses with specific contact hours assigned are available upon request.

All applications for enrollment should be forwarded on NAVEDTRA 1550/1 to Commanding Officer, HSETC Correspondence Course Training (Code 212), Naval Medical Command, National Capital Region, Bethesda, MD 20814.

Audiovisual Materials Available

The Audiovisual Library Division of the Medical Installation Audiovisual Center, Naval School of Health Sciences (NSHS), Bethesda, is planning a new catalog, listing and describing the library's holdings. Some of the newest additions to the library are:

- #800003DN Basic Skills for EMT (20 unit adapted commercial/35 mm slide/tape program)
- #43037DN Periodontal Bone Grafting Technique
- #35810DN Helicopter Medevac from a Surface Ship
- #46071DN Self-Imposed Stress and Flying
- #35814DN Shipboard Inspection by Medical Department Personnel—Inspection of Food Preparation Areas
- #35815DN Shipboard Inspection by Medical Department personnel—Inspection of Food Service Areas

- #35816DN Shipboard Inspection by Medical Department Personnel—Inspection of Storage Areas

- #35817DN Shipboard Inspection by Medical Department Personnel—Inspection of Scullery Areas

- #79079DN Shipboard Stored Product Pests

- #79277DN Potable Water Contamination

- #79280DN Medical Diagnostic and Operative Coding: Introduction

- #800328DN Sickle Cell Fundamentals

- #82707DN Emergency Dental Treatment: Anesthesia

- #82480DN The Naval Aviation Physiology Training Program: Manual Seat/Man Separation: Martin-Baker Ejection Seat

For additional information contact Mrs. Rose Prakas, Chief, Audiovisual Library Division, MIAVC, NSHS, Bethesda, MD 20814. Telephone: Autovon 295-1226, Commercial (202) 295-1226.

Scientific Experiments

The Massachusetts Institute of Technology will offer a elementary course in Design and Analysis of Scientific Experiments 11-16 July 1983.

Applications will be made to the physical, chemical, biological, medical, engineering, and industrial sciences, and to experimentation in psychology and economics.

Further information may be obtained by writing to the Director of Summer Session, Room E19-356, Massachusetts Institute of Technology, Cambridge, MA 02139.

Atomic Energy Applications in Parasitology

The International Atomic Energy and the U.S. Department of Energy will sponsor a workshop entitled Atomic Energy Applications in Parasitology—Nuclear Techniques in the Study, Diagnosis, and Control of Human Parasitic Diseases. The workshop will be held 8-24 Aug 1983 at the Uniformed Services University of the Health Sciences (USUHS), Bethesda.

For more information write to Dr. Michael Stek, Jr., Course Director, Department of Preventive Medicine and Biometrics, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814.

U.S. NAVAL PUBLICATIONS and FORMS CENTER
ATTN: CODE 306
5801 Tabor Avenue
Philadelphia, PA 19120
Official Business

POSTAGE AND FEES PAID
DEPARTMENT OF THE NAVY
DoD-316



SECOND CLASS

U.S. NAVY MEDICINE